

In re OREN ET AL., Application No. 10/042,836
Amendment A

REMARKS

The Office action dated May 20, 2004, and the references cited have been fully considered. In response, please enter the amendments and consider the following remarks.

Applicants appreciate the notification that claims 27-31 are allowed.

The specification is amended herein to correct a typographical error and to add eleven paragraphs corresponding to the claims filed with the original application. Additionally, the transition word "While" is changed to "In one embodiment". No new matter is added with any of the amendments to the specification nor to the claims.

The claims are amended herein, without adding any new matter, to withdraw claims 18-19 per the telephoned restriction requirement, and to amend claim 1 to include the limitations of its original dependent claim 4, with claim 4 being canceled. Claims 5 and 27 are also amended to correct typographical errors by adding the word "and", and claim 9 is amended to correct a typographical error and to provide a claims with proper antecedent basis as it is a *set* of entries that has at least two entries (and not an entry). Claims 20-26 are canceled without prejudice.

Applicants also appreciate Examiner Chace discussing on or about September 1, 2004, the § 102 rejections presented in the Office action and a generalized embodiment. As such, Applicants believe that there was a confusion by the Office as to the use of the phrase "nested condition" as described in the application as originally filed. One embodiment uses this term to refer a conditional nested operation or the like, wherein a determination is made whether or not (e.g., a condition) to generate a sequence of multiple lookup words based on the received information (e.g., a nested operation), or whether to generate a single lookup word, with these lookup words or word being used to generate multiple or a single associative memory lookup result. One such use of the term nested condition is illustrated in FIG. 6A, process block 604, which determines whether to generate a single lookup word in process block 608, or one or more lookup words by looping through process blocks 614-618. Applicants note that this explanation is not limiting on the scope of the claims as they stand on their own merit in light of the entire

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specification and not just an excerpt discussed herein. Some of the various examples of a nested condition and nested operations are described in the specification, such as beginning on page 13, line 22 and beginning on page 14, line 11.

In regards to the Election/Restrictions: Applicants have withdrawn claims 18-19 per the request of the Office in light of its restriction requirement and associated determination that these are claims are drawn to a different invention. (Note, Applicants' attorney's registration number is 42,229.)

In regards to the Information Disclosure Statements: Applicants greatly appreciate the Office's consideration of the submitted references, for initialing and signing copies of the 1449's, and for sending copies of such to Applicants.

In regards to the Specification: Applicants respectfully traverse the 35 USC § 112, first paragraph rejections for at least the reasons presented here, and request all § 112 rejections be withdrawn.

First, Applicants respectfully traverse the objection to Applicants' use of the term "or" as its use is consistent with an accepted meaning, especially common usage in the fields of Computer Science and Electrical Engineering, as well as Philosophy and other disciplines. The Office may be confusing the term "or" with "exclusive or." For example, with two inputs, an "or" operation is true if at least one the two operands is true, and false only if both are false. Consider the expression: "the Commissioner for Patents owns a red vehicle if the Commissioner owns a red car or a red truck." This expression is true if the Commissioner: (a) owns a red car, (b) owns a red truck, or (c) owns both a red car and a red truck. In contrast, for two inputs, an "exclusive or operation" is true if and only if a single one of the two operands is true, and not true if both are true. Applicants traverse the default construction of "or" as being defined as "exclusive or." This textbook definition for an "or" may be found in a Computer Science,

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Electrical Engineering, or Philosophy text, such as JAMES W. GAULT AND RUSSELL L. PIMMEL, INTRODUCTION TO MICRO-COMPUTER-BASED DIGITAL SYSTEMS at 11 (McGraw Hill, Inc. 1982), which shows "or" and "exclusive or" truth tables.

Next, Applicants respectfully traverse the objection to Applicants use of "programming and using multiple virtual portions of one or more physical associative memories." Applicants do not understand why it is unclear to one skilled in the art based on the specification that an embodiment programs multiple virtual portions of one or more physical associative memories *and* uses multiple virtual portions of one or more physical associative memories. There is no requirement that items used with the conjunction "and" be non-overlapping. In fact, in Computer Science and Electrical Engineering and other disciplines, the "and" operation would always be false if the items were not overlapping, and the objection to applicants' use of the word "or" in the Office action suggests that the word "and" is appropriate when both/all of a set of conjunctive items are performed. Additionally, the specific and literal use of the word "programming" provides clear § 112 support for certain claim limitations (e.g., "programming an associative memory" in claim 1).

Applicants respectfully traverse the rejection of the use of the term "wildcards" in the specification as originally filed. A wildcard is a term well known in the art, and clearly one skilled in the art would understand, for example, that where unique decoder field values are used to identify specific sets/subsets, an embodiment could use a wildcard to match/identify one or more decoder field values, thus identifying one or more sets or subsets. As the Office suggests, one embodiment might implement the wildcard as one or more don't care bits, especially when a TCAM is used. However, the use of the term wildcard is not limited to any one implementation.

The introductory word "while" is changed herein without adding new matter to say "in one embodiment".

In regards lines 9-10 of page 15, applicants respectfully submit that they do make sense, especially in the context of the entire sentence and whole paragraph (and entire specification as originally filed). In this example, the first lookup can match any entry in the associative memory,

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the second lookup can match any entry not in the first portion. Thus, the first lookup can match an entry in the second portion (which means the first lookup does not match an entry in the first portion) and the second lookup will match the same entry in the second portion.

In regards to the use of the word "context" in lines 14-22 on page 15. "Context" typically refers to the circumstances surrounding an event. The specification does not limit the use of an embodiment to any particular context. However, for example the specification beginning on page 10, line 20 states "[i]n one embodiment, for example, a set might include a category of entries, such as, but not limited to routing information, access lists, quality of service, etc., wherein a subset identifies a specific group of entries to be searched within a particular category of entries."

In regards to the use of the word "deriving", FIG. 6A shows multiple ways a lookup word can be derived (i.e., generated, produced, etc.) and therefore applicants respectfully traverse this objection. Additionally, the specification is amended herein to include the claims filed with the original application (rewritten more in sentence format), thus the specification does literally use this term, and thus this objection is moot. Moreover, applicants submit that neither the MPEP nor Rule 75 requires every term used in the claims be literally be found in the specification. In fact, MPEP § 608.01(o) states that an applicant is not limited to the nomenclature used in the application as filed. In any event,

For at least these reasons, applicants respectfully request all objections and/or rejections related to the specification be withdrawn.

In regards to the 35 USC § 112 rejections of claim 7: applicants respectfully traverse the rejections of claim 7. First, the specification as originally filed beginning on page 12, line 26 states that "[l]ookup word generator 310 identifies whether information 300 is related to a nested condition, such as by looking at an indicator or flag included within information 300, by referencing some data structure, by receiving an external signal, or via any other mechanism." Thus, the specification does provide support that the nested condition could be identified by a

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nested condition indication within the received information itself or by another mechanism whereby the piece of information does not include the nested condition indication. Additionally, the specification is amended herein without adding new matter to included the claims as originally filed, thus there is clearly support for these claims limitation in the specification.

For at least these reasons, applicants respectfully request these rejections be withdrawn.

In regards to the 35 USC § 102 rejections. Claims 1-17 and 20-26 were rejected under 35 USC § 102(a) and (e) as being anticipated by Uzun, US Patent 6,606,681. Claim 1 is amended herein to include the limitations of its original dependent claim 4, with claim 4 being canceled (thus claim 1 is original claim 4 re-written in independent form).

As discussed in the Examiners Interview on or about September 1, 2004, the Office apparently agreed that it misunderstood the teachings of the application as originally filed, especially in terms of the nested condition and its generation of multiple lookup words (e.g., generating a "burst" of lookup words as characterized by the Office).

Applicants respectfully traverse the § 102 rejections of pending claims 1-3, and 5-17 as Uzun neither teaches nor suggests all the recited claim limitations of the pending claims.

Referring to specific claims, applicants respectfully traverse the interpretation by the Office that receiving a piece of information and deriving a first lookup word in claim 1 are the same thing. It is a fundamental tenant of patent law that each claim element must be given a meaning. Moreover, one skilled in the art would clearly understand that these limitations are different. For example, process block 602 of FIG. 6A recites receiving a piece of information and 604-618 present different mechanisms and/or manners in which lookup words are derived (i.e., generated, produced, etc.).

Next, amended claim 1 recites "receiving a second piece of information including a data item and a nested condition indication; identifying the nested condition; and generating a plurality of lookup words in response to said identifying, each of the plurality of lookup words including the data item and one of a plurality of predetermined decoder values." Applicants

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submit the Uzun neither teaches nor suggests generating multiple lookup words from a same piece of information in response to the identification of a nested condition. Rather, Uzun is concerned with performing a lookup operation on a CAM in for a received search string, and has no concept of a nested condition, nor the generation of multiple lookup words as recited by the claims and taught by the originally filed application. Additionally, Uzun's use of N entries with a $K \times N$ entry random access memory allows each of the CAM entries to be associated with K memory entries for storing corresponding values. These are not lookup words. Normally, a CAM is programmed with matching values, which are then matched against an input lookup word to produce an associative memory result - i.e., the address of the highest-priority matching entry if a match was made. This address is then typically used as an address based on which to perform a lookup in a corresponding memory to identify the action to be performed for the context of the embodiment (e.g., for routing, it may indicate an output interface to which to send a packet). Providing K contiguous memory locations for each CAM entry (instead of one) allows more information to be directly retrieved in response to the match of a lookup word. This neither teaches nor suggests generating multiple lookup words based on a received piece of information in response to identifying a nested condition as recited in claim 1. For at least these reasons, independent claim 1 and its pending dependent claims 2 and 3 are believed to be allowable.

Referring to the next claim set consisting of independent claim 5 and its dependent claims 6-17, claim 5 similarly recites "...identifying a nested condition associated with the data item; and in response to said identifying the nested condition, generating a plurality of lookup words with a predefined set of decoder fields of the plurality of unique decoder fields." For at least the reasons discussed in relation to independent claim 1, claims 5-17 are believed to be allowable.

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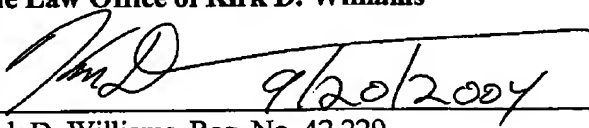
Final Remarks. In view of the above remarks and for at least the reasons presented herein, all pending claims are believed to be allowable over the prior art of record, the application is considered in good and proper form for allowance, and the Office is respectfully requested to issue a timely Notice of allowance in this case. If, in the opinion of the Office, a telephone conference would expedite the prosecution of the subject application, the Office is invited to call the undersigned attorney.

Applicants hereby request a one-month extension of time and hereby authorize the Commissioner to charge the \$110 fee to the credit card indicated with the included form PTO-2038. Moreover, the Commissioner is hereby generally authorized under 37 C.F.R. § 1.136(a)(3) to treat this communication or any future communication in this or any related application filed pursuant to 37 C.F.R. § 1.53 requiring an extension of time as incorporating a request therefore, and the Commissioner is hereby specifically authorized to charge Deposit Account No. 501430 for any fee that may be due in connection with such a request for an extension of time. Moreover, the Commissioner is hereby authorized to charge payment of any fee due any under 37 C.F.R. §§ 1.16 and § 1.17 associated with this communication or any future communication in this or any related application filed pursuant to 37 C.F.R. § 1.53 or credit any overpayment to Deposit Account No. 501430.

Respectfully submitted,
The Law Office of Kirk D. Williams

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By


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